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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,926	09/13/2000	Nobuaki Tokushige	900-348	7467

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EXAMINER

HU, SHOUXIANG

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 02/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/660,926

Applicant(s)

TOKUSHIGE, NOBUAKI

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 28 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 12-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 13 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 12-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

In addition, applicant elects Species I of Figs. 1a and 1b in Paper No. 5 for further prosecution and identifies claims 1-6 and 11 as readable thereon. However, claim 11 depends on claim 7, which is unreadable on Species I, but instead readable on Species II of Figs. 3-5d. Nevertheless, Species I and Species II with claims 1-11 readable thereon are both examined in this Office Action, in order to better satisfy applicant's election.

Drawings

2. Fig. 9 is objected to because:

Numeral "46" in it should read as --66--.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 6 and 10, insofar as being supported by elected Species I along with Species II, are objected to because of the following informalities or defects:

Claims 6 and 10 recites the subject matter that the P-type well and the N-type well are electrically isolated from each other. However, according to Fig. 4(d), these wells are only substantially electrically isolated from each other under certain bias polarities with respect to these wells.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-10, insofar as being supported by elected Species I along with Species II and as the claims objections set forth in this Office Action being properly overcome, are rejected under 35 U.S.C. 103(a) as being unpatentable over Burr (6,072,217) in view of Numata et al. ("Numata"; 6,043,536).

Burr discloses a semiconductor device (Figs. 5-7), comprising: a MOS transistor on a semiconductor layer (including 516) formed on a semiconductor substrate (510); buried insulating film (508); an element isolating region (Ox); and a contact portion (544 or 546) for applying a bias voltage to a P-type well (540) or N-type well (542) in the

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substrate, wherein the P-type well and the N-type well are substantially electrically isolated from each other.

Burr does not expressly disclose that the bias voltage can be applied to the P-type or N-type well through a contact region formed in the element isolating region. However, Numata teaches to form an SOI type MOS transistor (Fig. 20, or 41) with a bias voltage (10) applied to the back gate well (11) in the substrate through a contact region (19) formed in an element isolating region (12), for supplying the bias voltage from the upper surface of the substrate.

Therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the contact region of Numata into the semiconductor device of Burr, so that a semiconductor device with the bias voltage being supplied from the upper surface of the substrate would be obtained.

6. Claims 1-6 and 11, insofar as being supported by elected Species I along with Species II and as the claims objections set forth in this Office Action being properly overcome, are rejected under 35 U.S.C. 103(a) as being unpatentable over Burr (6,072,217) in view of Numata et al. ("Numata"; 6,043,536) as applied to claims 7-10 above, and further in view of Yamaguchi et al. ("Yamaguchi"; 5,557,231).

The disclosures of Burr and Numata are discussed as applied to claims 7-10 above.

Although Burr and Numata do not disclose that different bias voltages are applied to the substrate in an operating state and a standby state, Yamaguchi teaches (see the

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abstract, and also see Figs. 2, 16 and 17) that by changing the potential of the substrate bias in the active state and the standby state of a MOS transistor, which inherently changes the threshold voltage of the MOS transistor, the power consumption in the standby state can be reduced and the speed of operation in the active state can be improved.

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the different bias voltages of Yamaguchi into the semiconductor device collectively taught by Burr and Numata, so that a semiconductor device with reduced power consumption in the standby state and improved operation speed in the active state would be achieved.

Conclusion

7. Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 or 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Shouxiang Hu** whose telephone number is **(703) 306-5729**. The examiner can normally be reached on Monday through Thursday from 7:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Tom Thomas**, can be reached on **(703) 308-2772**. The appropriate fax phone number for the organization where this application or proceeding is assigned is **(703) 308-7724**.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **(703) 308-0956**.



Shouxiang Hu

February 21, 2002